

### **Remarks/Arguments**

Claims 1-36 are pending in this Application. Claims 22-25 and 36 are allowed and Claims 32-35 have been canceled without prejudice. In the Office Action mailed on the date of December 27, 2005, the Examiner:

1. Objected to the disclosure for minor informalities;
2. Rejected Claims 1-3, 5-15, 17, 18, 21 and 26-31 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 5,459,570 (Swanson et al.) in view of a reference by Schmitt (IEEE J. Selected Topics in Quantum Electronics); and
3. Objected to Claims 4, 16, 19 and 20 as being dependent on a rejected base claim but deemed allowable if rewritten in independent form.

#### ***Objections***

On page 2 of the Office Action, the Examiner requested Applicants' cooperation in correcting minor informalities in the Application. Applicants thanks the Examiner for pointing out such informalities and have amended paragraphs [0001] and [0014] accordingly as provided in the Amendments to the Specification beginning on page 2 of this reply. Paragraph [0001] has been amended to identify the Provisional Application Number and update the status of the parent Application now issued. Paragraph [0014] has been amended to clarify the Brief Description of Several Views of the Drawings and, in particular, Figure 6 and Figure 7. Applicants also submit amended paragraph [0021], amended as to matters of form and to make more clear the numbering of two segments, segment A and segment B. No new matter has been introduced with such amendments. Applicants respectfully request acceptance and entry of the amendments as provided herein.

On page 5 of the Office Action, the Examiner objected to Claims 4, 16, 19 and 20 for depending on a rejected base claim and indicated that they would be allowable if rewritten in independent form including all limitations of the base claim and intervening claims. The Examiner stated, "The prior art of record, particularly Swanson et al. and Schmitt, does not disclose or reasonably suggest a polarization-maintaining reference path in a fiber-based optical low-coherence reflectometer which comprises two separate polarization-maintaining optical fibers, one of which is connected to a phase modulator and the other of which is connected to an optical delay line." Applicants introduce new Claim 37 that combines

original Claim 4 with all the limitation of the base claim from which it depends, which is original Claim 1. No new matter is introduced with new Claim 37 which discloses a polarization-maintaining reference path in a fiber-based optical low-coherence reflectometer comprising two separate polarization-maintaining optical fibers, one of which is connected to a phase modulator and the other to an optical delay line. Entry and allowance of new Claim 37 is respectfully requested.

*Claims Rejection - 35 U.S.C. § 103(a)*

On page 2 of the Office Action, the Examiner rejected Claims 1-3, 5-15, 17, 18, 21 and 26-31 under 35 U.S.C. § 103(a) as being unpatentable over Swanson et al. in view of Schmitt. The Examiner states,

“Swanson et al. does not clearly show or disclose whether or not a collimating lens is also included in the polarization-maintaining sample path. Schmitt, however, in the same type of fiber-based optical low-coherence reflectometer [see Figure 4(c)], clearly shows that the sample path should include both a collimating lens and a focusing lens in front of the sample to be illuminated.”

Applicants agree that Swanson does not disclose a collimating lens, particularly one included in the polarization-maintaining sample path. Applicants submit amended Claims 1, 26 and 27, amended to include a further description of the polarization-maintaining reference path as “optically coupled to a phase modulator and an optical delay line.” Applicants submit that amended Claims 1, 26 and 27 are not disclosed in Swanson and/or Schmitt, as supported by the Examiner’s statement, “the prior art of record does not disclose or reasonably suggest a polarization-maintaining reference path in a fiber-based optical low-coherence reflectometer which comprises two separate polarization-maintaining optical fibers, one of which is connected to a phase modulator and the other of which is connected to an optical delay line.” Applicant respectfully requests entry and allowance of amended Claims 1, 26 and 27 and all claims depending therefrom as provided in the Listing of Claims beginning on page 4 of this paper.

With reference to Claims 30 and 31, Applicants respectfully submit amended Claims 30 and 31. Claim 30 is amended to include “a polarization-maintaining optical sample path that is optically coupled to a phase modulator.” [Emphasis added to show amended text.] Claim 31 is amended to include “a polarization-maintaining optical reference path optically connected to the polarization-maintaining path coupler and optically coupled to a phase

modulator and an optical delay line.” [Emphasis added to show amended text.] Claims 30 and 31 include matter not included in the references made of record, as supported by the Examiner when stating, “The reflectometer of claim 36 is patentably distinct because the prior art of record does not disclose or reasonably suggest a polarization-maintaining reference path in a fiber-based optical low-coherence reflectometer which comprises two separate polarization-maintaining optical fibers, one of which is connected to a phase modulator and the other of which is connected to an optical delay line.” No new matter is introduced with new Claims 30 and 31 and their entry and allowance are respectfully requested.

Applicants also submit new Claims 38-40, claims believed to be patentably distinct from the references of record and necessary to fairly protect the Applicants’ invention. New Claim 38 is included to provide further description of the polarization-maintaining sample path and finds support in the specification, at, e.g., paragraph [0021]. New Claim 39 is included to provide further description of the polarization-maintaining sample path as “optically aligned with a collimating lens onto a variable wave retarder, and then to a focusing lens, wherein the focusing lens is disposed to focus light on a sample.” Support for new Claim 39 is found throughout the specification, at, e.g., paragraphs [0017]-[0024]. No new matter is introduced with new Claims 38-39. Applicants respectfully request entry and allowance of these new claims as provided with the Listing of Claims beginning on page 4 of this paper.

*Statement of Joint Inventorship*

Applicants were advised on page 7 of the Office Action of the obligation under 37 C.F.R. § 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time of invention in order to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a). Applicants hereby state that the rights to each invention of the claimed subject matter in the instant application were, at the time of such invention, commonly owned by the Assignee as a consequence of invention assignments from the named inventors.

**Conclusion**

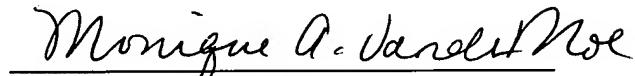
In light of the remarks and arguments presented herein, favorable consideration and allowance of pending Claims 1-3, 5-15, 17, 18, 21 and 26-31 and new Claims 37-39 are therefore respectfully requested.

A Petition for Extension of Time for one-month and corresponding fees are provided with this Amendment. No additional fees are believed due. If this is incorrect, Applicants hereby authorize the Commissioner to charge any fees, other than the issue fee, that may be required by this paper to Deposit Account 07-0153.

If the Examiner has any questions or comments, or if further clarification is required, it is requested that the Examiner contact the undersigned at the telephone number listed below.

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Respectfully submitted,  
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